



AMS-02 Cryocooler Bracket PDR

Bracket Design Verification

Presented by
Stuart Banks



Design Verification



- Parts inspection & cleaning
- Integrate cooler & bracket
 - Are any additional jigs required?
 - Would cooler be damaged during assembly?
 - Identification of critical procedures
- Measure envelope & Weigh assembly
- Mount bracket to test fixture



Design Verification



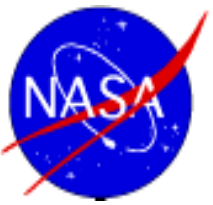
- Vacuum leak test
- Operational test
 - Characterize base reaction force
 - Measure ΔT @ heat reject collar
 - Measure temperature distribution around cooler
- Random vibration test & Strength test
- Measure thermal conductance of bracket
- Post Qualification → Test fit with vacuum case during acoustic test



AMS-02 Cryocooler Bracket PDR

Mission Assurance

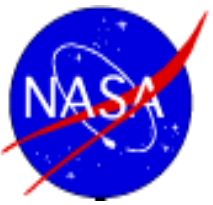
Presented by
Susan Breon



Mission Assurance



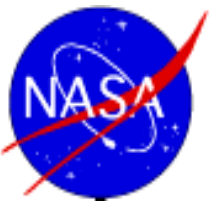
- Configuration Management
 - Drawings controlled by Swales CM system
 - Interface requirements documents, procedures, plans, test reports controlled by GSFC Code 552 CM system
- WOAs
 - WOAs will be established and maintained for all flight hardware, including CFE cryocoolers
- Non-conformances reported in GSFC NCRS
 - Close-out requires Mission Assurance sign-off



Mission Assurance (cont.)



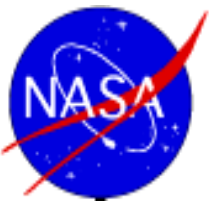
- IMTE will be verified to be in calibration at time of use
- Risk management
 - Fourth cryocooler is redundant for mission success
 - Two flight spare cryocoolers and brackets will be prepared along with flight hardware
 - Simplified FMEA will be conducted to determine safing procedures in case of cryocooler failure
- ITAR approval is MIT responsibility
 - Approval already received from State Department



Mission Assurance (cont.)



- Materials, Processes, and Parts
 - Materials, processes, and EEE parts lists will be submitted to Code 541 for approval
- Transportation
 - MIT will accept delivery of cryocoolers in place at Goddard
 - Goddard will assist MIT in packing and shipping
 - MIT is responsible for shipping documentation



GDMS Applicable Documents



- GPG 1410.2 Configuration Management
- GPG 1440.7 Records Control
- GPG 4520.2 Receiving, Inspection and Test
- GPG 5330.1 Product Processing, Inspection and Test
- GPG 5340.2 Control of Nonconforming Product
- GPG 5900.1 Control of Customer Supplied Product
- GPG 8730.1 Calibration and Metrology
- GPG 8730.3 The GSFC Quality Manual
- GPG 8700.2 Design Development
- GPG 8700.3 Design Validation